ANALOG DEVICES

Software Tool User Guide
UG-049

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Super Sequencer Software Programming Tool User Guide

GENERAL DESCRIPTION

This user guide describes a command line tool to use with the ADM1062/ADM1063/ADM1064/ADM1065/ADM1066/ADM1067/ADM1068/ADM1069/ADM1166/ADM1168/ADM1169, hereafter referred to as a Super Sequencer® device. The tool, called prog106x.exe, is designed to allow a user to manipulate the EEPROM in a single Super Sequencer device. If it is necessary to program more than one device, create a standard batch file to automate and simplify the process.

The prog106x.exe tool is designed to perform the following basic functions:

- Detect if a device is present on the bus
- Erase EEPROM contents
- Download an Intel hex format file to EEPROM
- Upload EEPROM to an Intel hex format file
- Verify EEPROM against an Intel hex format file

These functions are explained in detail in this user guide.

DETECT

The detect function checks if a Super Sequencer device with a user-specified device address is present on the I^2C bus. This can be useful in a batch file to determine if one or more devices are present at specific addresses on a particular board. If one or more devices are not present, then the programming process can be stopped before any of the devices are modified.

All other functions in the software perform a detect operation prior to carrying out their action.

ERASE EEPROM

The erase function erases the entire EEPROM of a Super Sequencer device at the user-specified device address**.**

DOWLOAD TO EEPROM

An Intel hex file can be generated using the ADM106x to ADM116x Super Sequencer evaluation software; the default file extension used is .hex. When the download function is selected, the entire EEPROM contents of the device are first erased, and then replaced with the data taken from a user-specified Intel hex file.

After the data is downloaded, the contents of the EEPROM on the device are verified against the hex file on disk in a byte-by-byte manner to ensure a successful download.

UPLOAD EEPROM

The upload function reads the EEPROM contents of the Super Sequencer device and creates a file on disk with a user-specified name. The device EEPROM contents are verified against the contents of the output file to ensure the data was correctly uploaded.

VERIFY EEPROM

The verify function compares the contents of the device EEPROM against an Intel hex file on disk byte-by-byte. If the data in the EEPROM and in the file on disk do not match, the function generates an error and outputs the number of bytes that are mismatched.

For more information on the ADM1062 to ADM1069, ADM1166, ADM1168, and ADM1169 devices, and to download the evaluation software, visit www.analog.com.

SOFTWARE INSTALLATION AND USAGE

Installation

Versions 1.2.0 or later of prog106x.exe are installed as part of version 4.1.0 of the Super Sequencer evaluation software. Earlier versions of prog106x.exe require version 4.0.5 or 4.0.6 of the ADM1062 to ADM1069 evaluation software to be installed prior to installing and using this tool. This is necessary because the evaluation software installs a device driver used by the dongle to interface correctly with `the PC.

Usage

Because prog106x is a command line tool, it must be run from a DOS window. This is typically accessed using the **Run** command available on the Windows® Start menu. Enter the word **command** as the executable to run.

When installed as part of version 4.1.0 of the Super Sequencer evaluation software, the prog106x.exe file is installed in a system directory, and so should automatically be found by the DOS command shell. No modifications of the PATH environmental variable should be required in this instance.

Enter **prog106x** at the command line, without options, to produce output that describes the tool options and gives some common usage cases.

For example, to program a part at Address 0x6E, with an Intel hex format file, enter

```
prog106x download 6E c:\text.hex
```

All device addresses are treated as 8-bit, with the LSB set to zero.

Examples of usage for the other commands are as follows:

```
prog106x detect 4e
prog106x erase 58
prog106x upload 7e c:\config.hex
prog106x verify 2A c:\saved.hex
```

After the contents of the EEPROM are modified, it is recommended that the device be power cycled. This is to download the EEPROM contents to the RAM-based configuration registers

Using Batch Files

A DOS batch file can be used to program multiple devices quickly and simply, minimizing the possibility of user error. Prog106x.exe includes error reporting that can be used within a batch file to take appropriate action in the event of an unexpected condition.

The following batch file checks if four specific devices are present on the I²C bus. The four devices are only programmed if all devices are detected. If one or more devices are not detected, the programming run is stopped, and no device EEPROM is modified.

```
@ECHO OFF
:BEGIN
del log.txt
rem detect all devices
Echo checking devices

prog106x detect 6E >>log.txt
if not %errorlevel% == 0 goto fail
prog106x detect 6A >>log.txt
if not %errorlevel% == 0 goto fail
prog106x detect 6C >>log.txt
if not %errorlevel% == 0 goto fail
prog106x detect 4C >>log.txt
if not %errorlevel% == 0 goto fail

rem download configurations to devices
Echo downloading configuration

prog106x download 6E test_config.hex >>log.txt
if not %errorlevel% == 0 goto fail
prog106x download 6A test_config2.hex >>log.txt
if not %errorlevel% == 0 goto fail
prog106x download 6C test_config3.hex >>log.txt
if not %errorlevel% == 0 goto fail
prog106x download 4C test_config4.hex >>log.txt
if not %errorlevel% == 0 goto fail

:pass
echo.
echo Programming successful
goto end

:fail
echo.
echo Failure detected
echo Error code: %errorlevel%
:END
```

Additional Software Information

Note the following:

- This software is only intended for use with the USB-to-I²C dongle, USB-SMBUS-CABLEZ. It is not compatible with the parallel-to-I²C dongle, CABLE-SMBUS-3PINZ.
- This software only supports the loading of the Intel hex file format. It does not support use of the standard Super Sequencer evaluation software configuration files.
- This software is not compatible with the main ADM1062 to ADM1069 evaluation board, EVAL-ADM106X-EBZ.

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